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ABSTRACT

This self-appraisal checklist was designed by the Ohio State Board of Education to help Ohio teachers and administrators improve elementary science programs. The checklist is organized into seven major categories which represent essential aspects of an elementary science program, including: (1) philosophy; (2) organization and administration; (3) class management and instruction; (4) staff; (5) curriculum; (6) facilities and equipment; and (7) student evaluation. (Author/CS)

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A Self-Appraisal Checklist for Science in Ohio's Secondary Schools

Division of Elementary and Secondary Education
Ohio Department of Education
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1980

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Introduction

The purpose of this self-appraisal checklist is to help Ohio teachers and administrators improve secondary science programs. The checklist was prepared by the Ohio Department of Education, Division of Elementary and Secondary Education, with valuable assistance from a committee of educators.

The checklist is organized into seven major categories which represent essential aspects of a secondary science program. While the organization of the program, extent of facilities and activities available, staffing patterns, and other components of the program may vary widely among schools, the categories are represented to some degree in each school's program. The checklist, therefore, can be useful to any school in assessing the existing program and comparing it to a quality program exemplified by the checklist items.

How To Use This Checklist

The Self-Appraisal Checklist for Science in Ohio's Secondary Schools contains 110 items. Each item represents a criterion against which a science program can be judged. The evaluative criteria are presented in the form of statements which describe attributes of science programs. Each statement sets forth a condition which is deemed highly desirable for a quality program. The evaluator should read carefully each statement and determine as objectively as possible the extent to which the statement describes the school's program. This appraisal should be recorded by indicating the extent to which the evaluator believes that the statement describes the school's program. This extent is indicated by circling:

4 if the evaluator *strongly agrees* that the statement describes the program.

3 if the evaluator *agrees* that the statement describes the program.

2 if the evaluator is *undecided.*

1 if the evaluator *disagrees* that the statement describes the program.

0 if the evaluator *strongly disagrees* that the statement describes the program.

A **4** rating suggests that the attribute in the school's program is very satisfactory; a **3** rating indicates the attribute is satisfactory. A **2** rating may identify an aspect of the program which is borderline between satisfactory and unsatisfactory. A **1** rating suggests a need for program improvement, and **0** indicates that the stated attribute is missing from the program.

A *possible score* is given for each category and for the total program based upon a 4 rating for each statement. The *self-appraisal score* is the total of the ratings given by the evaluator and should be compared to the *possible score* to determine the status of each category and of the total program. The "Summary of Scores" and "Score Comparison Chart" should be used to make these comparisons.

When the checklist has been completed, needed program improvements should be identified on the basis of discrepancies between self-appraisal scores and possible scores. These needed improvements should be listed by categories. The list may then give direction to continuing efforts toward improving the quality of the secondary science program.

1. Philosophy

Possible score: 28 points
Self-appraisal score: ___points

Circle appropriate response:
4 *Strongly agree*
3 *Agree*
2 *Undecided*
1 *Disagree*
0 *Strongly disagree*

1.	A statement of philosophy for science programs is available to all science teachers.	**4**	**3**	**2**	**1**	**0**
2.	The statement of philosophy for science is reviewed periodically by the staff members.	**4**	**3**	**2**	**1**	**0**
3.	The practices used in the science classrooms reflect what is described in the statement of philosophy.	**4**	**3**	**2**	**1**	**0**
4.	In accordance with school and science department philosophies, a clear rationale justifies the need for each course.	**4**	**3**	**2**	**1**	**0**
5.	If asked, an administrator or teacher in the building would be able to cite specific instances of the positive impact of the philosophy statement on science instruction.	**4**	**3**	**2**	**1**	**0**
6.	The science philosophy in the school reflects current knowledge about science teaching.	**4**	**3**	**2**	**1**	**0**
7.	Students are frequently involved in science experiments in accordance with the current philosophy of science teaching.	**4**	**3**	**2**	**1**	**0**

2. Organization and Administration

Possible score: 72 points
Self-appraisal score: ___points

Circle appropriate response:
4 *Strongly agree*
3 *Agree*
2 *Undecided*
1 *Disagree*
0 *Strongly disagree*

1.	The science program is articulated with the program offered in lower grades.	**4**	**3**	**2**	**1**	**0**
2.	A graded course of study for science has been approved by the State Board of Education in the past five years.	**4**	**3**	**2**	**1**	**0**
3.	A locally developed curriculum guide is in use.	**4**	**3**	**2**	**1**	**0**

4.	Goals and objectives for science programs are directly related to the written educational goals for the district or school.	**4**	**3**	**2**	**1**	**0**
5.	At least two meetings per year are held at the building level for administrators and science teachers to discuss the program and special needs.	**4**	**3**	**2**	**1**	**0**
6.	A science coordinator, chairperson, or supervisor has been identified to provide leadership for the improvement of the program.	**4**	**3**	**2**	**1**	**0**
7.	Sufficient time is scheduled to conduct laboratory instruction.	**4**	**3**	**2**	**1**	**0**
8.	Each science teacher has sufficient preparation time for laboratory activities.	**4**	**3**	**2**	**1**	**0**
9.	There is an ongoing mechanism for program evaluation in science, such as standardized tests, and feedback from teachers, students, parents, and graduates.	**4**	**3**	**2**	**1**	**0**
10.	The administration encourages teachers and students to participate in science fairs and in other regional and statewide competitions each year.	**4**	**3**	**2**	**1**	**0**
11.	Science-related activities such as science club, photography club, and junior engineering technical society club, are available to students.	**4**	**3**	**2**	**1**	**0**
12.	The administration supports field trip activities by providing adequate resources.	**4**	**3**	**2**	**1**	**0**
13.	The administration provides a budget annually for the science department and communicates this information to the department.	**4**	**3**	**2**	**1**	**0**
14.	Special assistance from outside sources such as colleges and industry is sought periodically to enhance the effectiveness of the science program.	**4**	**3**	**2**	**1**	**0**
15.	Administrative support is readily available to implement the approved program of study.	**4**	**3**	**2**	**1**	**0**
16.	Science teachers involved in teaching similar courses engage in cooperative planning.	**4**	**3**	**2**	**1**	**0**
17.	High school science teachers have opportunity to interact with elementary, middle, and junior high school science teachers.	**4**	**3**	**2**	**1**	**0**

18.	Inservice education activities organized in the district include program offerings dealing with science issues.	**4**	**3**	**2**	**1**	**0**

3. Class Management and Instruction

Possible score: 76 points
Self-appraisal score: ___points

Circle appropriate response:

4 *Strongly agree*
3 *Agree*
2 *Undecided*
1 *Disagree*
0 *Strongly disagree*

1.	The teacher-pupil ratio in science classrooms does not exceed 1 to 27.	**4**	**3**	**2**	**1**	**0**
2.	Instructional methods in science classrooms encourage students to be active participants.	**4**	**3**	**2**	**1**	**0**
3.	Science teaching leads to frequent student inquiry, exploration, and experimentation.	**4**	**3**	**2**	**1**	**0**
4.	Students are permitted to pursue unique and creative ideas.	**4**	**3**	**2**	**1**	**0**
5.	Instructional activities are varied and provide a balance among laboratory, lecture, and discussion.	**4**	**3**	**2**	**1**	**0**
6.	Science instruction is sequenced from concrete experimental learning to abstract ideas.	**4**	**3**	**2**	**1**	**0**
7.	Science programs are taught in such a way that students see relevance and application of the concepts to their day-to-day experiences.	**4**	**3**	**2**	**1**	**0**
8.	Field trips are conducted.	**4**	**3**	**2**	**1**	**0**
9.	Science films or television programs are preceded by a relevant introduction by the teacher.	**4**	**3**	**2**	**1**	**0**
10.	Science films or television viewing is followed by appropriate activities.	**4**	**3**	**2**	**1**	**0**
11.	Excessive use of films and television is avoided to use the time for group interaction, self-discovery, and other learning activities.	**4**	**3**	**2**	**1**	**0**
12.	The use of resource persons is common in the science program.	**4**	**3**	**2**	**1**	**0**
13.	Equipment and physical fixtures are available in sufficient quantity.	**4**	**3**	**2**	**1**	**0**

14.	Teachers expand the content beyond the basic textbook.	**4**	**3**	**2**	**1**	**0**
15.	Students are engaged in at least one science project outside the classroom during the year.	**4**	**3**	**2**	**1**	**0**
16.	Students are encouraged to present technical reports of their projects.	**4**	**3**	**2**	**1**	**0**
17.	The learning needs of all students are met.	**4**	**3**	**2**	**1**	**0**
18.	Special attention is given to the student who has been mainstreamed in science classrooms.	**4**	**3**	**2**	**1**	**0**
19.	Promising practices within one science classroom are shared with other teachers.	**4**	**3**	**2**	**1**	**0**

4. Staff

Possible score: *60 points*

Self-appraisal score: *___points*

Circle appropriate response:

4 *Strongly agree*
3 *Agree*
2 *Undecided*
1 *Disagree*
0 *Stongly disagree*

1.	Science teachers are effective in using both print and nonprint materials.	**4**	**3**	**2**	**1**	**0**
2.	Science teachers hold properly validated teaching certificates for the assigned courses.	**4**	**3**	**2**	**1**	**0**
3.	Inservice education activities pertaining to science teaching are attended by the staff annually.	**4**	**3**	**2**	**1**	**0**
4.	An intensive inservice education effort is organized when new science programs are implemented.	**4**	**3**	**2**	**1**	**0**
5.	New science teachers are given extensive orientation about instructional programs in the science department.	**4**	**3**	**2**	**1**	**0**
6.	The science staff is properly trained in laboratory safety techniques.	**4**	**3**	**2**	**1**	**0**
7.	Classroom teachers have access to a resource person/science coordinator for consultation within the building or the school district.	**4**	**3**	**2**	**1**	**0**
8.	Teachers are encouraged to develop innovative approaches to teaching science.	**4**	**3**	**2**	**1**	**0**

9.	Special incentives are available to teachers for attending professional science meetings.	**4**	**3**	**2**	**1**	**0**
10.	Information and ideas from professional meetings and conferences are shared by the participants with other staff members.	**4**	**3**	**2**	**1**	**0**
11.	Department staff meetings are held regularly to provide coordination and opportunities for professional growth.	**4**	**3**	**2**	**1**	**0**
12.	Teachers follow a plan for personal and professional growth through:					
	a. Reading	**4**	**3**	**2**	**1**	**0**
	b. Graduate studies	**4**	**3**	**2**	**1**	**0**
	c. Workshops and conferences	**4**	**3**	**2**	**1**	**0**
	d. Professional science organizations	**4**	**3**	**2**	**1**	**0**

5. Curriculum

Possible score: *76 points*

Self-appraisal score: ___*points*

Circle appropriate response:

4 *Strongly agree*
3 *Agree*
2 *Undecided*
1 *Disagree*
0 *Stongly disagree*

1.	The graded course of study for science is definite in scope and sequence, has clear course objectives, and permits a reasonable degree of flexibility and adaptation.	**4**	**3**	**2**	**1**	**0**
2.	Suggestions are sought from all science teachers before curriculum decisions are made.	**4**	**3**	**2**	**1**	**0**
3.	The curriculum materials used in classrooms include both print and nonprint.	**4**	**3**	**2**	**1**	**0**
4.	Before changes are made in the program, the opinions of students, teachers, and others are sought.	**4**	**3**	**2**	**1**	**0**
5.	The science curriculum is comprehensive for students who are not majoring in science.	**4**	**3**	**2**	**1**	**0**
6.	The application of scientific knowledge in everyday living is given an important place in the science program.	**4**	**3**	**2**	**1**	**0**
7.	The science program teaches appreciation for the contributions of science to modern society.	**4**	**3**	**2**	**1**	**0**

8.	The science curriculum stresses the development of a scientific attitude.	**4**	**3**	**2**	**1**	**0**
9.	The science curriculum emphasizes process skills as well as science content.	**4**	**3**	**2**	**1**	**0**
10.	An environmental education program is an important part of the science curriculum.	**4**	**3**	**2**	**1**	**0**
11.	Objectives have been developed for the individual topics and units in each course offered.	**4**	**3**	**2**	**1**	**0**
12.	Learning experiences are provided for gifted students in each science course.	**4**	**3**	**2**	**1**	**0**
13.	Special provisions have been made for handicapped students.	**4**	**3**	**2**	**1**	**0**
14.	Remedial help is given to those who need it.	**4**	**3**	**2**	**1**	**0**
15.	The science program provides for independent activities and projects.	**4**	**3**	**2**	**1**	**0**
16.	Curriculum guides are available for each approved course and are used by teachers.	**4**	**3**	**2**	**1**	**0**
17.	Supplementary library materials, print and nonprint, are readily available.	**4**	**3**	**2**	**1**	**0**
18.	The science program is evaluated annually on both subjective and objective criteria.	**4**	**3**	**2**	**1**	**0**
19.	Science instructional materials are current.	**4**	**3**	**2**	**1**	**0**

6. Facilities and Equipment

Possible score: *100 points*

Self-appraisal score: ____*points*

Circle appropriate response:

4 *Strongly agree*
3 *Agree*
2 *Undecided*
1 *Disagree*
0 *Strongly disagree*

1.	Classrooms are adequate for both group instruction and extended independent work.	**4**	**3**	**2**	**1**	**0**
2.	Science classrooms have sufficient student work stations.	**4**	**3**	**2**	**1**	**0**
3.	A facility is available within the building for the proper housing of animals.	**4**	**3**	**2**	**1**	**0**
4.	Laboratory supplies are available.	**4**	**3**	**2**	**1**	**0**

5.	Outdoor facilities are conducive to individual student projects.	4	3	2	1	0
6.	A current inventory of equipment and supplies is maintained.	4	3	2	1	0
7.	Teachers have access to a television monitor.	4	3	2	1	0
8.	Rooms can be sufficiently darkened for audiovisual activities.	4	3	2	1	0
9.	Audiovisual equipment is readily available to teachers.	4	3	2	1	0
10.	Science classes are conducted in appropriate rooms equipped with demonstration tables, work stations, water, gas outlets, and exhaust fans or fume hoods where needed.	4	3	2	1	0
11.	Science classes are conducted in an area of the building which lends itself to convenient movement of equipment and supplies.	4	3	2	1	0
12.	Storage facilities for chemicals, supplies, and equipment are safe and free from health hazards.	4	3	2	1	0
13.	All supplies are periodically inspected for safety hazards followed by appropriate disposal of unwanted materials.	4	3	2	1	0
14.	All chemicals and supplies are properly labeled.	4	3	2	1	0
15.	Safety and first aid equipment or supplies are readily accessible along with instructions for their use.	4	3	2	1	0
16.	Eye and face protection equipment, such as goggles and face shields, are available for students.	4	3	2	1	0
17.	Goggles are cleaned between wearings by different students.	4	3	2	1	0
18.	Science equipment is properly maintained and repaired.	4	3	2	1	0
19.	An adequate budget is available for consumable and nonconsumable materials for the science programs.	4	3	2	1	0
20.	Requisitions for the purchase of science materials are coordinated to insure that the needs of the entire science program are met.	4	3	2	1	0
21.	Funds are available for procuring living materials.	4	3	2	1	0

22.	Safety provisions have been implemented in science classrooms including proper ventilation and fire protection.	**4**	**3**	**2**	**1**	**0**
23.	Sufficient science materials, magazines and other reference sources, appropriate for student use, are available.	**4**	**3**	**2**	**1**	**0**
24.	The school subscribes to professional science education magazines.	**4**	**3**	**2**	**1**	**0**
25.	The media center has a sufficient collection of science materials.	**4**	**3**	**2**	**1**	**0**

7. Evaluation

Possible score: *28 points*

Self-appraisal score: ___*points*

Circle appropriate response:

4 *Strongly agree*
3 *Agree*
2 *Undecided*
1 *Disagree*
0 *Strongly disagree*

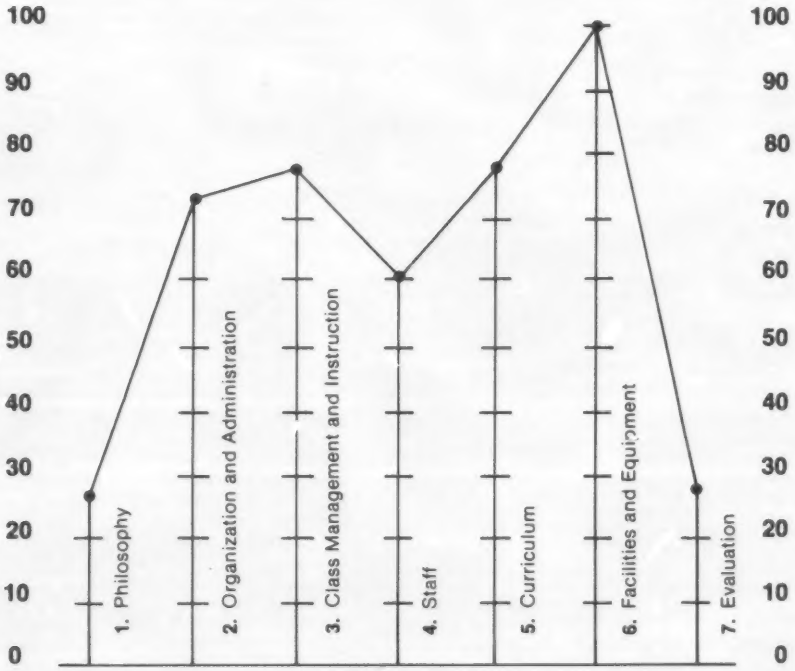
1.	The science department has a policy on the frequency of tests.	**4**	**3**	**2**	**1**	**0**
2.	Teachers use both subjective and objective criteria to evaluate students.	**4**	**3**	**2**	**1**	**0**
3.	Items included in an evaluation instrument are based on the goals and objectives of the program.	**4**	**3**	**2**	**1**	**0**
4.	Teachers have developed special grading criteria for those students who exhibit unique strengths in the subject.	**4**	**3**	**2**	**1**	**0**
5.	Evaluation is used as a tool for identifying teaching-learning strengths and weaknesses rather than for "grade keeping."	**4**	**3**	**2**	**1**	**0**
6.	A thorough analysis of standardized test scores is completed to identify strengths and weaknesses in the program.	**4**	**3**	**2**	**1**	**0**
7.	Students are encouraged to evaluate the instructional program.	**4**	**3**	**2**	**1**	**0**

Summary of Scores

		Possible Score	*Self-Appraisal Score*
1.	Philosophy	28	_____
2.	Organization and Administration	72	_____
3.	Class Management and Instruction	76	_____
4.	Staff	60	_____
5.	Curriculum	76	_____
6.	Facilities and Equipment	100	_____
7.	Evaluation	28	_____
	Totals	440	_____

Score Comparison Chart

The dots and connected line on the graph below indicate the highest possible summary of scores. Chart your self-appraisal scores to determine strong and weak areas of your secondary science program.



Summary of Needed Improvements

1. Philosophy

2. Organization and Administration

3. Class Management and Instruction

4. Staff

5. Curriculum

6. Facilities and Equipment

7. Evaluation

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